
Space Weather Forecast

Issued on Sunday 30 March 2025 at 00:36 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Increased chance of Minor/Moderate (R1/R2) radio blackouts.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Activity was Moderate in the period, with a two Moderate class flares observed 29/2138 UTC and 29/2259 UTC. The first Moderate class flare may be related to a potential Coronal Mass Ejection, from the centre disc close to an active region, pending imagery being available for analysis. This has the potential to be Earth-directed. The second Moderate class flare is associated with a Coronal Mass Ejection on the southeast limb and is unlikely to be Earth-directed.

There are up to six regions on the facing side. An active region on the southeast limb, appears to be a larger spot region. This region may have some complexity to it once fully visible on the disc and has been associated with previous Strong and a recent Moderate flare. Most regions have developed during this period but remain magnetically simple.

Solar Wind / Geomagnetic Activity: Solar wind parameters showed a gradual waning of a fast wind emanating from an intense 'coronal hole'.

The solar wind speed fell from Strong to become Slightly Elevated by the period's end. The associated magnetic field was Weak and of fluctuating between northwards and southwards direction. The net result of the above solar wind measures was for Quiet to Unsettled (Kp1-3) geomagnetic activity.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Moderate-class activity has been increased slightly and is now considered Likely. Strong-class activity have been revised downwards slightly due to lack of activity in this period but there continues to be a Slight Chance. No significant regions depart the facing side to reduce these levels.

Solar Wind / Geomagnetic Activity: There is a potential for an Earth-directed Coronal Mass Ejection, associated with an Moderate class flare from the centre disc at 29/2138 UTC, pending imagery being available for analysis. The current fast wind is waning, geomagnetic activity is

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expected to be generally Quiet to Unsettled with isolated Active intervals. There is then a possible minor resurgence due on 01 April from a comparatively minor coronal hole, with a further Slight Chance of G1.

Energetic Particles / Solar Radiation: No solar radiation storms are expected, with a negligible chance of enhancement from any larger flares given their likely far eastward emission locations.

Geomagnetic Storms

Geomagnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	5	1	5	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 (M Class)	Yes	60	60	60	60
Very Active	R3-R5 (X Class)	No	10	10	10	10

Solar Radiation Storms (High Energy Protons)

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = cm ⁻² sr ⁻¹ s ⁻¹)						